



RECREA  
ENVIRONMENTAL  
INC.

Chemical and Environmental Measurement Information

4/27/2027

Recra LabNet Philadelphia  
Analytical Report

Client : TNU-HANFORD B99-078  
RFW# : 9908L883  
SDG/SAF# : B99-078/H0503

W.O.# : 10985-001-001-0999-00

Date Received: 08-26-99

RECEIVED  
JAN 18 2000  
EDMC

\*REVISION\*

METALS CASE NARRATIVE

This package has been revised to include the addition of Antimony and Thallium.

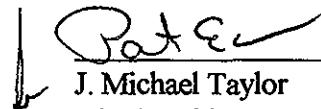
1. This narrative covers the analyses of 7 soil samples.
2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary.
3. All analyses were performed within the required holding times.
4. The cooler temperature has been recorded on the Chain of Custody.
5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury).
6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the PQL).
7. All preparation/method blanks (MB) were within method criteria {less than the Practical Quantitation Limit (3X the IDL) or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.
8. All ICP Interference Check Standards were within control limits.
9. All laboratory control samples (LCS) were within the laboratory control limits. Refer to the Inorganics Laboratory Control Standards Report.
10. The matrix spike (MS) recovery for 1 analyte was outside the 75-125% control limits.  
Refer to the Inorganics Accuracy Report.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of **020** pages.

11. For analytes where the ICP MS is out-of-control, a post-digestion MS (PDS) and serial dilution are performed. A PDS was prepared at the following concentration:

<u>Sample ID</u>	<u>Element</u>	<u>PDS Concentration (ppb)</u>	<u>PDS % Recovery</u>
B0W884	Antimony	500	99.8

12. The duplicate analyses for 5 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.
13. For the purposes of this report, the data has been reported to the Instrument Detection Limit (IDL). Values between the IDL and the Practical Quantitation Limit (PQL) are acquired in a region of less-certain quantification.

  
J. Michael Taylor  
Vice President  
Philadelphia Analytical Laboratory

mld/m08-883r

11-11-99  
Date

# METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this

Recra Lot#: 9908L883

Leaching Procedure: 1310 1311 1312 Other: \_\_\_\_\_

CLP Metals    Digestion and    Analysis Methods:    ILM03.0    ILM04.0

Metals Digestion Methods:    3005A    3010A    3015    3020A    ✓3050A    3051    200.7    SS17  
   Other: \_\_\_\_\_

## Metals Analysis Methods

	SW846	EPA	STD MTD	EPA	USATHAMA
				OSWR	
Aluminum	✓6010B	200.7			99
Antimony	✓6010B <u>  </u> 7041 <sup>5</sup>	200.7 <u>  </u> 204.2			99
Arsenic	✓6010B <u>  </u> 7060A <sup>5</sup>	200.7 <u>  </u> 206.2	<u>  </u> 3113B		99
Barium	✓6010B	200.7			99
Beryllium	✓6010B	200.7			99
Bismuth	✓6010B <sup>1</sup>	200.7 <sup>1</sup>		<u>  </u> 1620	99
Boron	✓6010B	200.7			99
Cadmium	✓6010B <u>  </u> 7131A <sup>5</sup>	200.7 <u>  </u> 213.2			99
Calcium	✓6010B	200.7			99
Chromium	✓6010B <u>  </u> 7191 <sup>5</sup>	200.7 <u>  </u> 218.2			SS17
Cobalt	✓6010B	200.7			99
Copper	✓6010B <u>  </u> 7211 <sup>5</sup>	200.7 <u>  </u> 220.2			99
Iron	✓6010B	200.7			99
Lead	✓6010B <u>  </u> 7421 <sup>5</sup>	200.7 <u>  </u> 239.2	<u>  </u> 3113B		99
Lithium	✓6010B <u>  </u> 7430 <sup>4</sup>	200.7		<u>  </u> 1620	99
Magnesium	✓6010B	200.7			99
Manganese	✓6010B	200.7			99
Mercury	✓7470A <sup>3</sup> ✓471A <sup>3</sup>	245.1 <sup>2</sup> <u>  </u> 245.5 <sup>2</sup>			99
Molybdenum	✓6010B	200.7			99
Nickel	✓6010B	200.7			99
Potassium	✓6010B <u>  </u> 7610 <sup>4</sup>	200.7 <u>  </u> 258.1 <sup>4</sup>			99
Rare Earths	✓6010B <sup>1</sup>	200.7 <sup>1</sup>		<u>  </u> 1620	99
Selenium	✓6010B <u>  </u> 7740 <sup>5</sup>	200.7 <u>  </u> 270.2	<u>  </u> 3113B		99
Silicon	✓6010B <sup>1</sup>	200.7		<u>  </u> 1620	99
Silica	✓6010B	200.7		<u>  </u> 1620	99
Silver	✓6010B <u>  </u> 7761 <sup>5</sup>	200.7 <u>  </u> 272.2			99
Sodium	✓6010B <u>  </u> 7770 <sup>4</sup>	200.7 <u>  </u> 273.1 <sup>4</sup>			99
Strontium	✓6010B	200.7			99
Thallium	✓6010B <u>  </u> 7841 <sup>5</sup>	200.7 <u>  </u> 279.2 <u>  </u> 200.9			99
Tin	✓6010B	200.7			99
Titanium	✓6010B	200.7			99
Uranium	✓6010B <sup>1</sup>	200.7 <sup>1</sup>		<u>  </u> 1620	99
Vanadium	✓6010B	200.7			99
Zinc	✓6010B	200.7			99
Zirconium	✓6010B <sup>1</sup>	200.7 <sup>1</sup>		<u>  </u> 1620	99

Other: \_\_\_\_\_

Method: \_\_\_\_\_

003

# METHOD REFERENCES AND DATA QUALIFIERS

## DATA QUALIFIERS

- U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.
- \* = Indicates that the original sample result is greater than 4x the spike amount added.

## ABBREVIATIONS

MB = Method or Preparation Blank.  
MS = Matrix Spike.  
MSD = Matrix Spike Duplicate.  
REP = Sample Replicate  
LCS = Laboratory Control Sample.  
NC = Not calculated.

## ANALYTICAL METAL METHODS

1. Not included in the method element list.
2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, 0.1 grams of sample is taken to a final volume of 50 mL (including all reagents).
3. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, three 0.1 gram of sample is taken to a final volume of 50 mL (including all reagents).
4. Flame AA.
5. Graphite Furnace AA.

## INORGANICS DATA SUMMARY REPORT 11/11/99

CLIENT: TNU-HANFORD B99-078

WORK ORDER: 10985-001-001-9999-00

RCRA LOT #: 9908L883

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR	
-001	BOW884	Silver, Total	0.1	u	MG/KG	0.1	1.0
		Arsenic, Total	4.9		MG/KG	0.30	1.0
		Barium, Total	99.1		MG/KG	0.03	1.0
		Beryllium, Total	0.28		MG/KG	0.01	1.0
		Cadmium, Total	0.16		MG/KG	0.03	1.0
		Chromium, Total	11.2		MG/KG	0.07	1.0
		Copper, Total	14.9		MG/KG	0.11	1.0
		Mercury, Total	0.02	u	MG/KG	0.02	1.0
		Nickel, Total	13.3		MG/KG	0.11	1.0
		Lead, Total	6.4		MG/KG	0.19	1.0
		Antimony, Total	0.56		MG/KG	0.22	1.0
		Selenium, Total	0.33	u	MG/KG	0.33	1.0
		Thallium, Total	1.1		MG/KG	0.47	1.0
		Vanadium, Total	46.9		MG/KG	0.05	1.0
		Zinc, Total	46.0		MG/KG	0.07	1.0
-002	BOW885	Silver, Total	0.1	u	MG/KG	0.1	1.0
		Arsenic, Total	16.8		MG/KG	0.36	1.0
		Barium, Total	129		MG/KG	0.03	1.0
		Beryllium, Total	0.45		MG/KG	0.01	1.0
		Cadmium, Total	0.19		MG/KG	0.03	1.0
		Chromium, Total	13.3		MG/KG	0.09	1.0
		Copper, Total	19.3		MG/KG	0.14	1.0
		Mercury, Total	0.02	u	MG/KG	0.02	1.0
		Nickel, Total	13.9		MG/KG	0.14	1.0
		Lead, Total	10.9		MG/KG	0.24	1.0
		Antimony, Total	0.61		MG/KG	0.28	1.0
		Selenium, Total	0.42	u	MG/KG	0.42	1.0
		Thallium, Total	0.60	u	MG/KG	0.60	1.0
		Vanadium, Total	39.5		MG/KG	0.07	1.0
		Zinc, Total	48.8		MG/KG	0.09	1.0

## INORGANICS DATA SUMMARY REPORT 11/11/99

CLIENT: TNU-HANFORD B99-078

WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 9908L863

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	BOW886	Silver, Total	0.10	u MG/KG	0.10	1.0
		Arsenic, Total	8.0	MG/KG	0.34	1.0
		Barium, Total	79.5	MG/KG	0.03	1.0
		Beryllium, Total	0.35	MG/KG	0.01	1.0
		Cadmium, Total	0.14	MG/KG	0.03	1.0
		Chromium, Total	9.5	MG/KG	0.08	1.0
		Copper, Total	16.3	MG/KG	0.12	1.0
		Mercury, Total	0.02	u MG/KG	0.02	1.0
		Nickel, Total	10.3	MG/KG	0.12	1.0
		Lead, Total	8.0	MG/KG	0.22	1.0
		Antimony, Total	0.45	MG/KG	0.26	1.0
		Selenium, Total	0.38	u MG/KG	0.38	1.0
		Thallium, Total	0.73	MG/KG	0.55	1.0
		Vanadium, Total	50.6	MG/KG	0.06	1.0
		Zinc, Total	47.8	MG/KG	0.08	1.0
-004	BOW887	Silver, Total	0.11	u MG/KG	0.11	1.0
		Arsenic, Total	11.1	MG/KG	0.37	1.0
		Barium, Total	117	MG/KG	0.03	1.0
		Beryllium, Total	0.37	MG/KG	0.01	1.0
		Cadmium, Total	0.15	MG/KG	0.03	1.0
		Chromium, Total	12.7	MG/KG	0.09	1.0
		Copper, Total	17.7	MG/KG	0.14	1.0
		Mercury, Total	0.02	u MG/KG	0.02	1.0
		Nickel, Total	12.6	MG/KG	0.14	1.0
		Lead, Total	9.8	MG/KG	0.24	1.0
		Antimony, Total	0.61	MG/KG	0.28	1.0
		Selenium, Total	0.60	MG/KG	0.42	1.0
		Thallium, Total	0.60	u MG/KG	0.60	1.0
		Vanadium, Total	49.1	MG/KG	0.07	1.0
		Zinc, Total	51.4	MG/KG	0.09	1.0

006

## INORGANICS DATA SUMMARY REPORT 11/11/99

CLIENT: TNU-HANFORD B99-078

WORK ORDER: 10985-001-001-9999-00

RCRA LOT #: 9908L863

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-005	BOW888	Silver, Total	0.11 u	MG/KG	0.11	1.0
		Arsenic, Total	6.6	MG/KG	0.34	1.0
		Barium, Total	63.7	MG/KG	0.03	1.0
		Beryllium, Total	0.29	MG/KG	0.01	1.0
		Cadmium, Total	0.1	MG/KG	0.03	1.0
		Chromium, Total	9.4	MG/KG	0.08	1.0
		Copper, Total	17.3	MG/KG	0.12	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Nickel, Total	10.5	MG/KG	0.12	1.0
		Lead, Total	7.0	MG/KG	0.21	1.0
		Antimony, Total	0.33	MG/KG	0.25	1.0
		Selenium, Total	0.38 u	MG/KG	0.38	1.0
		Thallium, Total	0.89	MG/KG	0.54	1.0
		Vanadium, Total	47.4	MG/KG	0.06	1.0
		Zinc, Total	46.9	MG/KG	0.08	1.0
-006	BOW890	Silver, Total	0.10 u	MG/KG	0.10	1.0
		Arsenic, Total	3.9	MG/KG	0.27	1.0
		Barium, Total	50.4	MG/KG	0.02	1.0
		Beryllium, Total	0.25	MG/KG	0.01	1.0
		Cadmium, Total	0.07	MG/KG	0.02	1.0
		Chromium, Total	7.7	MG/KG	0.06	1.0
		Copper, Total	16.8	MG/KG	0.1	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Nickel, Total	8.9	MG/KG	0.1	1.0
		Lead, Total	4.2	MG/KG	0.17	1.0
		Antimony, Total	0.33	MG/KG	0.20	1.0
		Selenium, Total	0.31	MG/KG	0.30	1.0
		Thallium, Total	0.90	MG/KG	0.43	1.0
		Vanadium, Total	32.1	MG/KG	0.05	1.0
		Zinc, Total	32.0	MG/KG	0.06	1.0

## INORGANICS DATA SUMMARY REPORT 11/11/99

CLIENT: TNU-HANFORD B99-078

WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 9908L883

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-007	B0W891	Silver, Total	0.10	u MG/KG	0.10	1.0
		Arsenic, Total	2.7	MG/KG	0.31	1.0
		Barium, Total	43.8	MG/KG	0.03	1.0
		Beryllium, Total	0.15	MG/KG	0.01	1.0
		Cadmium, Total	0.05	MG/KG	0.03	1.0
		Chromium, Total	6.7	MG/KG	0.07	1.0
		Copper, Total	12.4	MG/KG	0.11	1.0
		Mercury, Total	0.01	u MG/KG	0.01	1.0
		Nickel, Total	7.3	MG/KG	0.11	1.0
		Lead, Total	3.2	MG/KG	0.20	1.0
		Antimony, Total	0.25	MG/KG	0.23	1.0
		Selenium, Total	0.48	MG/KG	0.35	1.0
		Thallium, Total	0.75	MG/KG	0.49	1.0
		Vanadium, Total	27.5	MG/KG	0.06	1.0
		Zinc, Total	28.1	MG/KG	0.07	1.0

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## INORGANICS METHOD BLANK DATA SUMMARY PAGE 11/11/99

CLIENT: TNU-HANFORD B99-078

RCRA LOT #: 9908L883

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING		DILUTION FACTOR
					LIMIT		
BLANK1	99L0638-MB1	Silver, Total	0.10	u MG/KG	0.10		1.0
		Beryllium, Total	0.01	u MG/KG	0.01		1.0
BLANK1	99L0624-MB1	Arsenic, Total	0.33	u MG/KG	0.33		1.0
		Barium, Total	0.12	u MG/KG	0.03		1.0
		Cadmium, Total	0.03	u MG/KG	0.03		1.0
		Chromium, Total	0.10	u MG/KG	0.08		1.0
		Copper, Total	0.12	u MG/KG	0.12		1.0
		Nickel, Total	0.12	u MG/KG	0.12		1.0
		Lead, Total	0.21	u MG/KG	0.21		1.0
		Antimony, Total	0.25	u MG/KG	0.25		1.0
		Selenium, Total	0.37	u MG/KG	0.37		1.0
		Thallium, Total	0.53	u MG/KG	0.53		1.0
		Vanadium, Total	0.06	u MG/KG	0.06		1.0
		Zinc, Total	0.11	u MG/KG	0.08		1.0
BLANK1	99C0256-MB1	Mercury, Total	0.02	u MG/KG	0.02		1.0

009

## Recra LabNet - Lionville

INORGANICS ACCURACY REPORT 11/11/99

CLIENT: TNU-HANFORD B99-078

WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 9908L883

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	B0W884	Silver, Total	4.5	0.1 u	4.8	93.8	1.0
		Arsenic, Total	171	4.9	181	91.7	1.0
		Barium, Total	257	99.1	181	87.4	1.0
		Beryllium, Total	4.7	0.28	4.8	92.1	1.0
		Cadmium, Total	4.2	0.16	4.5	89.7	1.0
		Chromium, Total	27.5	11.2	18.1	90.1	1.0
		Copper, Total	35.1	14.9	22.6	89.4	1.0
		Mercury, Total	0.17	0.02u	0.17	103.6	1.0
		Nickel, Total	50.9	13.3	45.2	83.2	1.0
		Lead, Total	47.3	6.4	45.2	90.5	1.0
		Antimony, Total	16.3	0.56	45.2	34.8	1.0
		Selenium, Total	162	0.33u	181	89.9	1.0
		Thallium, Total	172	1.1	181	94.6	1.0
		Vanadium, Total	89.8	46.9	45.2	94.9	1.0
		Zinc, Total	86.4	46.0	45.2	89.4	1.0

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## Recra LabNet - Lionville

## INORGANICS PRECISION REPORT 11/11/99

CLIENT: TNU-HANFORD B99-078

WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 9908L883

SAMPLE	SITE ID	ANALYTE	INITIAL			DILUTION FACTOR (REP)
			RESULT	REPLICATE	RPD	
-001REP	B0W884	Silver, Total	0.1 u	0.08u	NC	1.0
		Arsenic, Total	4.9	4.1	17.8	1.0
		Barium, Total	99.1	89.0	10.7	1.0
		Beryllium, Total	0.28	0.29	2.9	1.0
		Cadmium, Total	0.16	0.12	32.0	1.0
		Chromium, Total	11.2	9.5	16.4	1.0
		Copper, Total	14.9	13.8	7.7	1.0
		Mercury, Total	0.02u	0.02u	NC	1.0
		Nickel, Total	13.3	10.4	24.5	1.0
		Lead, Total	6.4	6.5	1.6	1.0
		Antimony, Total	0.56	0.29	64.4	1.0
		Selenium, Total	0.33u	0.42	NC 200	1.0
		Thallium, Total	1.1	0.47u	NC 200	1.0
		Vanadium, Total	46.9	39.6	16.9	1.0
		Zinc, Total	46.0	41.8	9.6	1.0

Corrections  
11/11/99

## Recra LabNet - Lionville

## INORGANICS LABORATORY CONTROL STANDARDS REPORT 11/11/99

CLIENT: TNU-HANFORD B99-078

RECRA LOT #: 9908L883

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED	SPIKED	UNITS	%RECOV
			SAMPLE	AMOUNT		
LCS1	99L0638-LC1	Silver, LCS	48.9	50.0	MG/KG	97.8
		Beryllium, LCS	24.2	25.0	MG/KG	96.8
LCS1	99L0624-LC1	Arsenic, LCS	965	1000	MG/KG	96.5
		Barium, LCS	488	500	MG/KG	97.5
		Cadmium, LCS	24.2	25.0	MG/KG	96.8
		Chromium, LCS	49.2	50.0	MG/KG	98.4
		Copper, LCS	122	125	MG/KG	97.6
		Nickel, LCS	191	200	MG/KG	95.6
		Lead, LCS	243	250	MG/KG	97.2
		Antimony, LCS	284	300	MG/KG	94.6
		Selenium, LCS	940	1000	MG/KG	94.0
		Thallium, LCS	1000	1000	MG/KG	100.2
		Vanadium, LCS	249	250	MG/KG	99.7
		Zinc, LCS	96.1	100	MG/KG	96.1
LCS1	99C0256-LC1	Mercury, LCS	0.96	1.0	MG/KG	96.0

Recra LabNet - Lionville Laboratory  
 INORGANIC ANALYTICAL DATA PACKAGE FOR  
 TNU-HANFORD B99-078

DATE RECEIVED: 08/26/99

RFW LOT # :9908L883

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION EXTR/PREP	ANALYSIS
<b>BOW884</b>					
SILVER, TOTAL	001	S	99L0638	08/24/99	09/22/99
SILVER, TOTAL	001 REP	S	99L0638	08/24/99	09/22/99
SILVER, TOTAL	001 MS	S	99L0638	08/24/99	09/22/99
ARSENIC, TOTAL	001	S	99L0624	08/24/99	09/14/99
ARSENIC, TOTAL	001 REP	S	99L0624	08/24/99	09/14/99
ARSENIC, TOTAL	001 MS	S	99L0624	08/24/99	09/14/99
BARIUM, TOTAL	001	S	99L0624	08/24/99	09/14/99
BARIUM, TOTAL	001 REP	S	99L0624	08/24/99	09/14/99
BARIUM, TOTAL	001 MS	S	99L0624	08/24/99	09/14/99
BERYLLIUM, TOTAL	001	S	99L0638	08/24/99	09/22/99
BERYLLIUM, TOTAL	001 REP	S	99L0638	08/24/99	09/22/99
BERYLLIUM, TOTAL	001 MS	S	99L0638	08/24/99	09/22/99
CADMIUM, TOTAL	001	S	99L0624	08/24/99	09/14/99
CADMIUM, TOTAL	001 REP	S	99L0624	08/24/99	09/14/99
CADMIUM, TOTAL	001 MS	S	99L0624	08/24/99	09/14/99
CHROMIUM, TOTAL	001	S	99L0624	08/24/99	09/14/99
CHROMIUM, TOTAL	001 REP	S	99L0624	08/24/99	09/14/99
CHROMIUM, TOTAL	001 MS	S	99L0624	08/24/99	09/14/99
COPPER, TOTAL	001	S	99L0624	08/24/99	09/14/99
COPPER, TOTAL	001 REP	S	99L0624	08/24/99	09/14/99
COPPER, TOTAL	001 MS	S	99L0624	08/24/99	09/14/99
MERCURY, TOTAL	001	S	99C0256	08/24/99	08/30/99
MERCURY, TOTAL	001 REP	S	99C0256	08/24/99	08/30/99
MERCURY, TOTAL	001 MS	S	99C0256	08/24/99	08/30/99
NICKEL, TOTAL	001	S	99L0624	08/24/99	09/14/99
NICKEL, TOTAL	001 REP	S	99L0624	08/24/99	09/14/99
NICKEL, TOTAL	001 MS	S	99L0624	08/24/99	09/14/99
LEAD, TOTAL	001	S	99L0624	08/24/99	09/14/99
LEAD, TOTAL	001 REP	S	99L0624	08/24/99	09/14/99
LEAD, TOTAL	001 MS	S	99L0624	08/24/99	09/14/99
ANTIMONY, TOTAL	001	S	99L0624	08/24/99	09/14/99
ANTIMONY, TOTAL	001 REP	S	99L0624	08/24/99	09/14/99
ANTIMONY, TOTAL	001 MS	S	99L0624	08/24/99	09/14/99
SELENIUM, TOTAL	001	S	99L0624	08/24/99	09/14/99
SELENIUM, TOTAL	001 REP	S	99L0624	08/24/99	09/14/99

013

Recra LabNet - Lionville Laboratory  
 INORGANIC ANALYTICAL DATA PACKAGE FOR  
 TNU-HANFORD B99-078

DATE RECEIVED: 08/26/99

RFW LOT #: 9908L883

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SELENIUM, TOTAL	001 MS	S	99L0624	08/24/99	09/14/99	09/15/99
THALLIUM, TOTAL	001	S	99L0624	08/24/99	09/14/99	09/15/99
THALLIUM, TOTAL	001 REP	S	99L0624	08/24/99	09/14/99	09/15/99
THALLIUM, TOTAL	001 MS	S	99L0624	08/24/99	09/14/99	09/15/99
VANADIUM, TOTAL	001	S	99L0624	08/24/99	09/14/99	09/15/99
VANADIUM, TOTAL	001 REP	S	99L0624	08/24/99	09/14/99	09/15/99
VANADIUM, TOTAL	001 MS	S	99L0624	08/24/99	09/14/99	09/15/99
ZINC, TOTAL	001	S	99L0624	08/24/99	09/14/99	09/15/99
ZINC, TOTAL	001 REP	S	99L0624	08/24/99	09/14/99	09/15/99
ZINC, TOTAL	001 MS	S	99L0624	08/24/99	09/14/99	09/15/99

BOW885

SILVER, TOTAL	002	S	99L0638	08/24/99	09/22/99	09/23/99
ARSENIC, TOTAL	002	S	99L0624	08/24/99	09/14/99	09/15/99
BARIUM, TOTAL	002	S	99L0624	08/24/99	09/14/99	09/15/99
BERYLLIUM, TOTAL	002	S	99L0638	08/24/99	09/22/99	09/23/99
CADMIUM, TOTAL	002	S	99L0624	08/24/99	09/14/99	09/15/99
CHROMIUM, TOTAL	002	S	99L0624	08/24/99	09/14/99	09/15/99
COPPER, TOTAL	002	S	99L0624	08/24/99	09/14/99	09/15/99
MERCURY, TOTAL	002	S	99C0256	08/24/99	08/30/99	08/30/99
NICKEL, TOTAL	002	S	99L0624	08/24/99	09/14/99	09/15/99
LEAD, TOTAL	002	S	99L0624	08/24/99	09/14/99	09/15/99
ANTIMONY, TOTAL	002	S	99L0624	08/24/99	09/14/99	09/15/99
SELENIUM, TOTAL	002	S	99L0624	08/24/99	09/14/99	09/15/99
THALLIUM, TOTAL	002	S	99L0624	08/24/99	09/14/99	09/15/99
VANADIUM, TOTAL	002	S	99L0624	08/24/99	09/14/99	09/15/99
ZINC, TOTAL	002	S	99L0624	08/24/99	09/14/99	09/15/99

BOW886

SILVER, TOTAL	003	S	99L0638	08/24/99	09/22/99	09/23/99
ARSENIC, TOTAL	003	S	99L0624	08/24/99	09/14/99	09/15/99
BARIUM, TOTAL	003	S	99L0624	08/24/99	09/14/99	09/15/99
BERYLLIUM, TOTAL	003	S	99L0638	08/24/99	09/22/99	09/23/99
CADMIUM, TOTAL	003	S	99L0624	08/24/99	09/14/99	09/15/99
CHROMIUM, TOTAL	003	S	99L0624	08/24/99	09/14/99	09/15/99
COPPER, TOTAL	003	S	99L0624	08/24/99	09/14/99	09/15/99

014

Recra LabNet - Lionville Laboratory  
 INORGANIC ANALYTICAL DATA PACKAGE FOR  
 TNU-HANFORD B99-078

DATE RECEIVED: 08/26/99

RFW LOT #: 9908L883

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MERCURY, TOTAL	003	S	99C0256	08/24/99	08/30/99	08/30/99
NICKEL, TOTAL	003	S	99L0624	08/24/99	09/14/99	09/15/99
LEAD, TOTAL	003	S	99L0624	08/24/99	09/14/99	09/15/99
ANTIMONY, TOTAL	003	S	99L0624	08/24/99	09/14/99	09/15/99
SELENIUM, TOTAL	003	S	99L0624	08/24/99	09/14/99	09/15/99
THALLIUM, TOTAL	003	S	99L0624	08/24/99	09/14/99	09/15/99
VANADIUM, TOTAL	003	S	99L0624	08/24/99	09/14/99	09/15/99
ZINC, TOTAL	003	S	99L0624	08/24/99	09/14/99	09/15/99

BOW887

SILVER, TOTAL	004	S	99L0638	08/24/99	09/22/99	09/23/99
ARSENIC, TOTAL	004	S	99L0624	08/24/99	09/14/99	09/15/99
BARIUM, TOTAL	004	S	99L0624	08/24/99	09/14/99	09/15/99
BERYLLIUM, TOTAL	004	S	99L0638	08/24/99	09/22/99	09/23/99
CADMİUM, TOTAL	004	S	99L0624	08/24/99	09/14/99	09/15/99
CHROMİUM, TOTAL	004	S	99L0624	08/24/99	09/14/99	09/15/99
COPPER, TOTAL	004	S	99L0624	08/24/99	09/14/99	09/15/99
MERCURY, TOTAL	004	S	99C0256	08/24/99	08/30/99	08/30/99
NICKEL, TOTAL	004	S	99L0624	08/24/99	09/14/99	09/15/99
LEAD, TOTAL	004	S	99L0624	08/24/99	09/14/99	09/15/99
ANTIMONY, TOTAL	004	S	99L0624	08/24/99	09/14/99	09/15/99
SELENIUM, TOTAL	004	S	99L0624	08/24/99	09/14/99	09/15/99
THALLIUM, TOTAL	004	S	99L0624	08/24/99	09/14/99	09/15/99
VANADIUM, TOTAL	004	S	99L0624	08/24/99	09/14/99	09/15/99
ZINC, TOTAL	004	S	99L0624	08/24/99	09/14/99	09/15/99

BOW888

SILVER, TOTAL	005	S	99L0638	08/24/99	09/22/99	09/23/99
ARSENIC, TOTAL	005	S	99L0624	08/24/99	09/14/99	09/15/99
BARIUM, TOTAL	005	S	99L0624	08/24/99	09/14/99	09/15/99
BERYLLIUM, TOTAL	005	S	99L0638	08/24/99	09/22/99	09/23/99
CADMİUM, TOTAL	005	S	99L0624	08/24/99	09/14/99	09/15/99
CHROMİUM, TOTAL	005	S	99L0624	08/24/99	09/14/99	09/15/99
COPPER, TOTAL	005	S	99L0624	08/24/99	09/14/99	09/15/99
MERCURY, TOTAL	005	S	99C0256	08/24/99	08/30/99	08/30/99
NICKEL, TOTAL	005	S	99L0624	08/24/99	09/14/99	09/15/99

Recra LabNet - Lionville Laboratory  
 INORGANIC ANALYTICAL DATA PACKAGE FOR  
 TNU-HANFORD B99-078

DATE RECEIVED: 08/26/99

RFW LOT # : 9908L883

CLIENT ID / ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
LEAD, TOTAL	005	S	99L0624	08/24/99	09/14/99	09/15/99
ANTIMONY, TOTAL	005	S	99L0624	08/24/99	09/14/99	09/15/99
SELENIUM, TOTAL	005	S	99L0624	08/24/99	09/14/99	09/15/99
THALLIUM, TOTAL	005	S	99L0624	08/24/99	09/14/99	09/15/99
VANADIUM, TOTAL	005	S	99L0624	08/24/99	09/14/99	09/15/99
ZINC, TOTAL	005	S	99L0624	08/24/99	09/14/99	09/15/99
<b>BOW890</b>						
SILVER, TOTAL	006	S	99L0638	08/24/99	09/22/99	09/23/99
ARSENIC, TOTAL	006	S	99L0624	08/24/99	09/14/99	09/15/99
BARIUM, TOTAL	006	S	99L0624	08/24/99	09/14/99	09/15/99
BERYLLIUM, TOTAL	006	S	99L0638	08/24/99	09/22/99	09/23/99
CADMIUM, TOTAL	006	S	99L0624	08/24/99	09/14/99	09/15/99
CHROMIUM, TOTAL	006	S	99L0624	08/24/99	09/14/99	09/15/99
COPPER, TOTAL	006	S	99L0624	08/24/99	09/14/99	09/15/99
MERCURY, TOTAL	006	S	99C0256	08/24/99	08/30/99	08/30/99
NICKEL, TOTAL	006	S	99L0624	08/24/99	09/14/99	09/15/99
LEAD, TOTAL	006	S	99L0624	08/24/99	09/14/99	09/15/99
ANTIMONY, TOTAL	006	S	99L0624	08/24/99	09/14/99	09/15/99
SELENIUM, TOTAL	006	S	99L0624	08/24/99	09/14/99	09/15/99
THALLIUM, TOTAL	006	S	99L0624	08/24/99	09/14/99	09/15/99
VANADIUM, TOTAL	006	S	99L0624	08/24/99	09/14/99	09/15/99
ZINC, TOTAL	006	S	99L0624	08/24/99	09/14/99	09/15/99
<b>BOW891</b>						
SILVER, TOTAL	007	S	99L0638	08/24/99	09/22/99	09/23/99
ARSENIC, TOTAL	007	S	99L0624	08/24/99	09/14/99	09/15/99
BARIUM, TOTAL	007	S	99L0624	08/24/99	09/14/99	09/15/99
BERYLLIUM, TOTAL	007	S	99L0638	08/24/99	09/22/99	09/23/99
CADMIUM, TOTAL	007	S	99L0624	08/24/99	09/14/99	09/15/99
CHROMIUM, TOTAL	007	S	99L0624	08/24/99	09/14/99	09/15/99
COPPER, TOTAL	007	S	99L0624	08/24/99	09/14/99	09/15/99
MERCURY, TOTAL	007	S	99C0256	08/24/99	08/30/99	08/30/99
NICKEL, TOTAL	007	S	99L0624	08/24/99	09/14/99	09/15/99
LEAD, TOTAL	007	S	99L0624	08/24/99	09/14/99	09/15/99
ANTIMONY, TOTAL	007	S	99L0624	08/24/99	09/14/99	09/15/99

OIC

Recra LabNet - Lionville Laboratory  
 INORGANIC ANALYTICAL DATA PACKAGE FOR  
 TNU-HANFORD B99-078

DATE RECEIVED: 08/26/99

RFW LOT #: 9908L883

CLIENT ID / ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SELENIUM, TOTAL	007	S	99L0624	08/24/99	09/14/99	09/15/99
THALLIUM, TOTAL	007	S	99L0624	08/24/99	09/14/99	09/15/99
VANADIUM, TOTAL	007	S	99L0624	08/24/99	09/14/99	09/15/99
ZINC, TOTAL	007	S	99L0624	08/24/99	09/14/99	09/15/99

LAB QC:

SILVER LABORATORY	LC1 BS	S	99L0638	N/A	09/22/99	09/23/99
SILVER, TOTAL	MB1	S	99L0638	N/A	09/22/99	09/23/99
ARSENIC LABORATORY	LC1 BS	S	99L0624	N/A	09/14/99	09/15/99
ARSENIC, TOTAL	MB1	S	99L0624	N/A	09/14/99	09/15/99
BARIUM LABORATORY	LC1 BS	S	99L0624	N/A	09/14/99	09/15/99
BARIUM, TOTAL	MB1	S	99L0624	N/A	09/14/99	09/15/99
BERYLLIUM LABORATORY	LC1 BS	S	99L0638	N/A	09/22/99	09/23/99
BERYLLIUM, TOTAL	MB1	S	99L0638	N/A	09/22/99	09/23/99
CADMIUM LABORATORY	LC1 BS	S	99L0624	N/A	09/14/99	09/15/99
CADMIUM, TOTAL	MB1	S	99L0624	N/A	09/14/99	09/15/99
CHROMIUM LABORATORY	LC1 BS	S	99L0624	N/A	09/14/99	09/15/99
CHROMIUM, TOTAL	MB1	S	99L0624	N/A	09/14/99	09/15/99
COPPER LABORATORY	LC1 BS	S	99L0624	N/A	09/14/99	09/15/99
COPPER, TOTAL	MB1	S	99L0624	N/A	09/14/99	09/15/99
MERCURY LABORATORY	LC1 BS	S	99C0256	N/A	08/30/99	08/30/99
MERCURY, TOTAL	MB1	S	99C0256	N/A	08/30/99	08/30/99
NICKEL LABORATORY	LC1 BS	S	99L0624	N/A	09/14/99	09/15/99
NICKEL, TOTAL	MB1	S	99L0624	N/A	09/14/99	09/15/99
LEAD LABORATORY	LC1 BS	S	99L0624	N/A	09/14/99	09/15/99
LEAD, TOTAL	MB1	S	99L0624	N/A	09/14/99	09/15/99
ANTIMONY LABORATORY	LC1 BS	S	99L0624	N/A	09/14/99	09/15/99
ANTIMONY, TOTAL	MB1	S	99L0624	N/A	09/14/99	09/15/99
SELENIUM LABORATORY	LC1 BS	S	99L0624	N/A	09/14/99	09/15/99
SELENIUM, TOTAL	MB1	S	99L0624	N/A	09/14/99	09/15/99
THALLIUM LABORATORY	LC1 BS	S	99L0624	N/A	09/14/99	09/15/99
THALLIUM, TOTAL	MB1	S	99L0624	N/A	09/14/99	09/15/99
VANADIUM LABORATORY	LC1 BS	S	99L0624	N/A	09/14/99	09/15/99
VANADIUM, TOTAL	MB1	S	99L0624	N/A	09/14/99	09/15/99
ZINC LABORATORY	LC1 BS	S	99L0624	N/A	09/14/99	09/15/99
ZINC, TOTAL	MB1	S	99L0624	N/A	09/14/99	09/15/99

9908C8E3

## Custody Transfer Record/Lab Work Request Page 1 of 1



All

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

(8) metals

Client TNL-Hanford B99-078				Refrigerator #	1	6-1		6	6	6						
				#/Type Container	Liquid											
					Solid	1g	1g-1		1g	1g	1g					
				Volume	Liquid											
					Solid	250	500-1		500	250	400					
				Preservatives												
				ANALYSES REQUESTED →	ORGANIC				INORG							
					VOA	BNA	Pest/PCB	Herb	Metal	CN						
					W/V	W/V	W/V	W/V								
Est. Final Proj. Sampling Date _____ Project # 100185-001-001-0000-00 Project Contact/Phone # _____ RECRA Project Manager OJ QC Spec Del 1st TAT 30 days Date Rec'd 8/26/99 Date Due 9/25/99 Account # _____				↓ RECRA LabNet Use Only ↓												
<b>MATRIX CODES:</b> S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum Solids DL - Drum Liquids L - EP/TCLP Leachate WI - Wipe X - Other F - Fish	Lab ID	Client ID/Description		Matrix QC Chosen (✓)  MS MSD	Matrix	Date Collected	Time Collected	8/24/99	8/25/99	8/26	8/26	8/26	8/26	8/26	8/26	8/26
								X	X	X	X	X	X	X	X	
	1	85				0756										
	2	86					0808									
	3	87						0826								
	4	88							0846							
	5	89								0904						
	6	90									0930					
	7	91										0930				

Special Instructions:

Saf# B99-078

**COMPOSITE  
WASTE**

## DATE/REVISIONS:

met 1 = As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se,  
 2. Ag, V, Zn, Hg, ICP&G

Anal 1 = IN3N2, ICCC, ICF1, ICNO2, ICNO3,  
 4. ICP04, ICS04, ISFD, INH3N, ICNT0  
 5. OXSC = ethanol + propanol  
 6. 423579528139-4.0°C

Relinquished by	Received by	Date	Time
61-6	D. Puhl	8/26/99	0950

Relinquished by	Received by	Date	Time
	Ojigineal Rewritten		

Discrepancies Between  
Samples Labels and  
COC Record? Y or N  
NOTES:

- RECRA LabNet Use Only
- Samples were: ✓ or  
 1) Shipped ✓ or  
 Hand Delivered \_\_\_\_\_  
 COC Tape was:  
 1) Present on Outer  
 Package Y or N  
 Unbroken on Outer  
 Package Y or N  
 2) Ambient or Chilled  
 3) Present on Sample  
 Y or N  
 4) Unbroken on  
 Sample Y or N  
 COC Record Present  
 Upon Sample Rec'd  
 Y or N  
 5) Received Within  
 Holding Times  
 Y or N  
 Cooler C 1.8 °C

Bechtel Hanford Inc.	<i>863</i>	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					B99-078-99	Page 1 of 2 07/24/99
Collector Bowers/Porter/Nielson		Company Contact Chris Gearlock	Telephone No. 372-9574	Project Coordinator TRENT, SJ		Price Code <b>8N</b>	Data Turnaround <b>45 Days</b>	
Project Designation 200 Area Source characterization - 200-CW-1 OU		Sampling Location GP-13 <15' bgs		SAF No. B99-078				
Ice Chest No. <i>ERC 96 013 w/ ERC 96 043</i>		Field Logbook No. EL-1511		Method of Shipment Federal Express				
Shipped To TMA/RCRA 11 D 26 8-24-99		Offsite Property No. <i>A990229</i>		Bill of Lading/Air Bill No. <i>4235 7952 8680</i>				
				COA <i>B20 CW 1671C</i>				

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	None	Cool 4C	None	Cool 4C	None	Cool 4C	None	
	Type of Container	aG	aG	aG	aG	aG	aG	aG	
	No. of Container(s)	1	1	1	1	1	1	1	
Special Handling and/or Storage	Volume	60mL	250mL	250mL	500mL	500mL	1000mL	1000mL	

SAMPLE ANALYSIS				Isotopic Uranium	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.	
Sample No.	Matrix *	Sample Date	Sample Time							
BOW884	Soil	8-24-99	0738		X	X	X	X		3.5' - 4.5'
BOW885	Soil	8-24-99	0756		X	X	X	X		6' - 7'
BOW886	Soil	8-24-99	0808		X	X	X	X		7.5' - 8.5'
BOW887	Soil	8-24-99	0826		X	X	X	X		11' - 12'
BOW888	Soil	8-24-99	0846		X	X	X	X		14' - 15'

CHAIN OF POSSESSION	Sign/Print Names			SPECIAL INSTRUCTIONS See chain of custody comments on SAF B99-078. <i>COLLECTOR UNAVAILABLE TO SIGN COC.</i>	Matrix *
Relinquished By <i>Brent Boler</i>	Date/Time 8/24/99 13:00	Received By <i>Reiter IB</i>	Date/Time 8/24/99 13:00	(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196	Soil
Relinquished By <i>REF ID: 82599 1100</i>	Date/Time 8/25/99 11:00	Received By <i>SIGALE M/B 82599 1100</i>	Date/Time 8/25/99 11:00	(2) NO2/NO3 - 353.1; IC Anions - 300.0 (Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate); Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010	Water
Relinquished By <i>SIGALE M/B 82599 1100</i>	Date/Time 8/25/99 11:00	Received By <i>FED EX</i>	Date/Time	(3) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Strontium-89.90 -- Total Sr; Total Uranium (Uranium); Isotopic Plutonium; Isotopic Thorium (Thorium-232); Americium-241	Vapor
Relinquished By <i>Jec Lee</i>	Date/Time 8/26/99 09:30	Received By <i>Johnson for DN</i>	Date/Time	use BOLTS Bowtie as shipping criteria	Other Solid
LABORATORY SECTION	Received By	Title			Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method		Disposed By		Date/Time

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST							B99-078-100	Page 1 of 1					
Collector Bowers/Porter/Nielson		Company Contact Chris Cearlock Telephone No. 372-9574			Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround <b>45 Days</b>						
Project Designation 200 Area Source characterization - 200-CW-1 OU		Sampling Location GP-13 >15' bgs			SAF No. B99-078										
Ice Chest No. <i>ERF 96 043</i>		Field Logbook No. EL-1511			Method of Shipment Federal Express										
Shipped To TMA/RCRA <i>8/20 8-24-99</i>		Offsite Property No. <i>A990229</i>			Bill of Lading/Air Bill No. <i>4235 7952 8679</i>										
					COA <i>B20 CW1 67/C</i>										
POSSIBLE SAMPLE HAZARDS/REMARKS				Preservation	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	None	
				Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
				No. of Container(s)	1	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage				Volume	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL	1000mL	
SAMPLE ANALYSIS					Isotopic Uranium	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1. Propanol, Ethanol);	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.	
Sample No.	Matrix *	Sample Date	Sample Time												
BOW890	<i>16.5'-19.5'</i>	<i>Soil</i>	<i>8-24-99</i>	<i>0904</i>					X X X X X						
BOW891	<i>24'-25'</i>	<i>Soil</i>	<i>8-24-99</i>	<i>0930</i>					X X X X X						
BOW892		<i>Soil</i>													
BOW893		<i>Soil</i>		<i>8/20 8-24-99</i>											
CHAIN OF POSSESSION		Sign/Print Names			SPECIAL INSTRUCTIONS See chain of custody comments on SAF B99-078. <i>COLLECTOR UNAVAILABLE TO SIGN COC</i>						Matrix *				
Relinquished By <i>Brent Porte</i>	Date/Time <i>8/24/99</i>	Received By <i>Keller TR</i>	Date/Time <i>8/24/99</i>		(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196						Soil				
Relinquished By <i>NSF 1P</i>	Date/Time <i>8/25/99 11:00</i>	Received By <i>Julie Due</i>	Date/Time <i>8/25/99</i>		(2) NO2/NO3 - 353.1; IC Anions - 300.0 (Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate); Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010						Water				
Relinquished By <i>Julie Due</i>	Date/Time <i>8/25/99 11:00</i>	Received By <i>FEDEX</i>	Date/Time <i>8/25/99</i>		(3) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Strontium-89.90 -- Total Sr; Total Uranium (Uranium); Isotopic Plutonium; Isotopic Thorium (Thorium-232); Americium-241						Vapor				
Relinquished By <i>Dee Lee</i>	Date/Time <i>8/26/99 0930</i>	Received By <i>Johnson for DN</i>	Date/Time <i>8/26/99 0930</i>		<i>use BOW5L8 as shipping criteria</i>						Other Solid				
LABORATORY SECTION	Received By				Title							Other Liquid			
FINAL SAMPLE DISPOSITION	Disposal Method				Disposed By							Date/Time			